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ABSTRACT

Despite commonly held views concerning educators' rational decision-making behavior, there are competing interpretations of school personnels' objective, actions, and decision-making processes. Alternative explanations emphasize bureaucratic routine, administrative convenience, educator self-interest, and political motivations, rather than improvement of student outcomes. The resource allocation process offers a window through which important building-level educational choices may be observed and analyzed. Drawing on a 1985 study, this paper analyzes the behaviors and processes of major participants in the resource allocation process, the manner in which the school actually operated, and school personnel's underlying motivations. Three contrasting perspectives or models (rational, bureaucratic organization, and public choice) are introduced and explained. During 1984-85, case studies were made of four high schools located in three separate Oregon school districts. The schools were chosen for differences in budgeting procedures, instructional and administrative arrangements, size, and socioeconomic status of student populations. Data were gathered through observation and interviews. Results showed that resource allocation in the high schools studied did not operate in a rational manner. Linking resource distribution to improving student outcomes was never explicitly considered. The combination of the bureaucratic organization model (to explain how) and the public choice model (to explain why) provides the most thorough explanation of the resource allocation process observed in these high schools. Included are 19 references. (MLH)

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UNDERSTANDING RESOURCE ALLOCATION IN HIGH SCHOOLS

by

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The author is indebted to William Boyd for his introduction to the public choice model and for his insightful criticisms.

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Much of the current discussion about and prescriptions for education utilize, implicitly or explicitly, an expectation of rational behavior on the part of educators; increased student achievement is presumed to be their main objective. This article challenges that view. Analysis of the attitudes and behaviors of high school administrators and faculty leaders suggests that a combination of a bureaucratic organization and a public choice model better explains both the schools' resource allocation decisions and the educators' objectives.

UNDERSTANDING RESOURCE ALLOCATION IN HIGH SCHOOLS

The literature on effective schooling suggests that the most effective schools operate in a rational, purposive manner. (Murphy, Hallinger, & Mesa, 1985) They engage in a deliberate, schoolwide effort to improve student achievement, the most common measure of their success being student test scores. The leaders in the school are supposed to identify which pedagogical, organizational, and social arrangements are the most beneficial for student learning and to implement them. All school resources--teachers, administrators, other staff, facilities, supplies, equipment--are focused on improving student outcomes. This is both a description of the best schools and a normative prescription for other, less effective schools to follow.

In spite of the national prominence and most favored status given to this view of how education should operate, there are competing, and possibly more accurate, interpretations of the objectives, decision making processes, and actions of school personnel, even in schools which have been nationally recognized as having achieved "excellence in education." Alternative explanations emphasize bureaucratic routine, administrative convenience, self-interest of school personnel, and political motivations, rather than improvement of student outcomes, as the primary determinants of school personnel behavior.

The resource allocation process offers a largely unused window from which to observe and analyze important building-level educational choices. Through the distribution of resources among the among the various instructional, support, and

administrative units in high schools, administrators and faculty have an opportunity to influence student outcomes, as well as their own working conditions and relationships. Drawing on an earlier report describing the resource allocation process in high schools (Hartman, 1985), this study analyzes the behaviors and decisions of the major participants in the resource allocation process, the manner in which the schools actually operated, and the underlying motivations of school personnel. Particular attention is paid to the objectives pursued through the distribution of resources in the schools and the results which the decision makers expected to achieve.

EXPLAINING RESOURCE ALLOCATION BEHAVIORS

Three contrasting perspectives are examined to help understand and explain the behaviors of those responsible for allocating resources within high schools. The first is a rational model approach which assumes that administrators and others involved in the process act in a logical fashion to improve student outcomes. The second approach is a bureaucratic organization model which assumes that resource allocation decisions are based on existing standard operating procedures and reflect the organization's primary concern with limiting and controlling changes to the present operation. The third approach is a political economy model which assumes that persons involved in the resource allocation process operate in a bureaucracy in which "individuals try to maximize their own welfare (or benefits) within the context of the institutional or organizational reward structure they face." (Boyd, 1982, p. 113)

These three approaches offer very different explanations of the objectives and motivations of school officials.

Rational Model Approaches

The common feature of rational approaches applied to the educational process is the presumption of rationality on the part of the decision makers. Cibulka's description of the rational approach provides an excellent example.

> Organizational behavior is both purpositive and deliberate. . . . [Decision makers] should establish priority among their goals, weigh the costs and benefits of alternative methods, and evaluate program results in reformulating policy. Budget setting should involve systematic procedures guaranteeing that policy will not be reacting merely to short-term pressures, but rather will reflect reasoned consideration of optimal choices. (1987, p. 12)

The fundamental assumption of the rational model as applied to education is that the goals of the organization are to improve student learning (usually measurable cognitive achievement). Consequently, high school personnel behave in a rational manner when they make decisions or take actions designed to enhance student outcomes. Decisions or actions based on other objectives or motivations are "irrational" in the sense that they are inefficient in producing student learning. Administrators and teachers operating in accordance with the rational model 1) pay explicit attention to student outcomes, and 2) use the expected impact on student outcomes as a primary criterion in making both administrative and programmatic decisions.

A strict specification of the rational model would require that the linkages between inputs into the educational system and the student outcomes be known and that administrators are capable of specifying an educational production function for their

operation. (Hanushek, 1986) From a managerial perspective the rational model assumes that administrators have: the authority to organize the production process in the most productive manner; the knowledge to select the appropriate types and mix of resources; and the ability to utilize information about the achievement of student outcomes in managing the educational process. (Levin, 1971) Finally, administrators are assumed to be accountable through their reward structure for student learning.

A loosening of these conceptual constraints is necessary to reflect more accurately the actual abilities of administrators and their management of high schools and to avoid setting up the rational model as a "straw man" to be easily rejected when theoretical standards are not met. It is not necessary that administrators and other school personnel exhibit perfectly rational behavior (i.e., make every decision and take every action based on an expected test score increase) in order to confirm the functioning of the rational model in high school resource allocation decisions. What is more significant for the rational model analysis is if they act and make resource allocation decisions as if they had such knowledge. Whether their decisions are based on past experience, personal belief, or on the burgeoning research findings of effective educational practices (MacKenzie, 1983; Purkey and Smith, 1982), administrators acting in accordance with the rational model will utilize improved student achievement as a major criterion for resource allocation decisions.

The rational approach is represented in school budgeting, the formalized aspect of resource allocation, by approaches like

the Planning-Programming-Budgeting-Evaluation System (PPBES) (Candoli, et al., 1984), Performance Budgeting (Mundt, Olsen, and Steinberg, 1982), and Zero-Based Budgeting (Phyrr, 1973). All of these budgeting approaches feature specification of objectives, estimation of results or outcomes to be achieved, linkage of resource allocation choices to maximization of outcomes, and use of analysis to justify budget decisions. As a description of PPBES states, "The PPBES cycle is directed to significant reallocation of the organization's resources in an effort to put those resources to more effective and efficient use. (van Geel, 1973, p. 2) While implementation of these rational budgeting approaches has generally not succeeded in elementary and secondary school systems (Kirst, 1975; Johnson, 1982), the concept of alignment of organizational objectives with budget decisions remains a useful measure of rationality in evaluating the resource allocation process. At a minimum, educators acting rationally should consider student outcomes and allocate resources in a way which they believe will improve student learning.

Label/Libel Gambit

The predisposition toward the rational approach is fostered by the terminology involved. Calling these practices and procedures "rational" establishes a strong implication that other approaches are "irrational." This is a subtle version of the label/libel gambit: something becomes perceived as what it is labeled, regardless of reality. The label eliminates the need to evaluate the item or process in question and serves as a

shorthand for thinking about it. In this case the gambit cuts both ways: the rational approaches receive the positive connotation of logic, fairness, thoughtful consideration, and goal achievement, while other, "non-rational," approaches suffer a negative image which, even though perhaps superficial, is the major way in which they may be perceived.

Bureaucratic Organization Models

In this approach schools are viewed as bureaucratic organizations in which high schools operate as part of a larger school system. Their choices in the resource allocation process are constrained not only by the policies and rules of the school district in which they are located, by state and federal statutes and regulations as well. Consequently, high school personnel develop a set of "standard operating procedures" to guide their actions. The behaviors of schools can be interpreted as "outputs of large organizations functioning according to a standard pattern of behavior." (Allison, 1970, p. 67)

The central feature of the bureaucratic approach is the dominance of the existing organizational process. "Existing organizational routines for employing present physical capabilities constitute the range of effective choice . . ." (Allison, 1970, p. 79) This translates into a strong preference for the status quo. The best prediction of what an organization will do in the next time period is what it is doing in the current time period. (Allison, 1970, p. 88) In this model resource allocation decisions for the next budget year are heavily influenced by the current distribution of resources.

In a bureaucratic organization the formal objectives, which provide the public rationale or purpose for the existence of the organization, are frequently not the goals pursued by the organization's members.

> The operational goals of an organization are seldom revealed by formal mandates. Rather, each organization's operational goals emerge as a set of constraints defining acceptable performance. Central among these constraints is organizational health, defined usually in terms of bodies assigned and dollars appropriated. The set of constraints emerges from a mix of the expectations and demands of other organizations in the government, statutory authority, demands from citizens and special interest groups, and bargaining within the organization. (Allison, 1970, p. 82)

For schools this means that the maintenance or increase in budget allocations, personnel allotments, and building space supercede the formal educational goals of student learning.

Uncertainty avoidance is another important characteristic of bureaucratic organizations. Unpredictable occurrences can upset the existing and familiar procedures and relationships. Consequently, organizations attempt to minimize uncertainty in their operations. "The primary environment . . . is stabilized by such arrangements as agreed budgetary splits, accepted areas of responsibility, and established practices." (Allison, 1970, p. 84) It is the "better the devil you know" syndrome that is behind the "organization's interest in controlling, rather than presenting, choices." (Allison, 1970, p.90)

In spite of members' efforts, bureaucratic organizations are not static entities. Changes in practices and procedures occur through reaction to outside influences, experiences with success or failure of present routines, and learning over time. However, such changes are largely incremental from the present base of operations. Further, they are shaped by the procedures present

in the existing organization.

Incremental budgeting (Wildavsky, 1976) is an example of the bureaucratic approach applied to the budget process. In incremental budgeting the organization's decision makers concentrate primarily on additions to the existing budget. The base amounts, which are the bulk of the budget, receive continued funding without examination. Budget behavior consists of attempting to maximize the annual increment added to the base. There are no radical shifts among budget areas because of the stability of the base of each area, the relatively small incremental amounts, and some expectation that all areas will receive a similar incremental percentage increase. The focus of the budget effort and of resource allocation decisions is internal and bureaucratic--who gets how much. Little, if any, consideration is given to the performance of the organizational units or to the outcomes they are expected to produce.

Political Models

Explanations utilizing a political perspective of fiscal and organizational behavior in educational systems view the results of any resource allocation process as determined by bargaining among self-interested individuals and groups. These groups are assumed to have different objectives (although some may overlap) and to work to satisfy their personal needs. Some of the groups may be internal to the organization (school board, district administrators, building principals, high school department heads, and the district teachers' association), while others may be external (special interest or advocacy organizations, business

organizations, voters). The distribution of resources in a school or district is based on objectives, power, and negotiating skills of the individuals and groups involved.

A prominent approach in this area is that of public choice theory. This analysis, focusing on the internal members of the organization, seeks to explain "how individual preferences are aggregated into collective decision-making in institutions in which markets fail or are not permitted, as in cases of government monopolies." (Cibulka, 1987, p. 9) In education, public choice theory has been utilized to interpret actions of public school personnel which do not appear to be aimed at the stated goals of schools, but instead work to advance the individual administrator's or teacher's personal objectives.

Boyd has used a public choice approach to explain the behavior of educational bureaucrats. (1982) The analysis observes that schools operate a government monopoly, rather than a competitive, market-oriented enterprise. In the non-market economy revenues received by schools do not depend on satisfying consumer demand or client needs, but instead, are derived primarily from local taxes levied by the school district and from grants from the state. Thus, the funds to operate schools depend on the mere existence of the district, not on any performance measures. Without an unambiguous and measurable goal for education, such as profitability in the private sector, educational administrators generally have few incentives to increase efficiency or productivity. As described by Michaelsen,

> Since there are, in the bureau, no profits which can be privately appropriated, we may assume that the bureaucrats, including schoolmen, seek instead to survive, to enlarge the scope of their activities, to gain prestige, to avoid

> conflict, to control the organization and content of their daily round as much as possible. All these are, as it were, profit in kind." (1977, p. 239)

The lack of agreed-upon goals, of criteria for measuring their achievement, and of an information system to provide performance results means that administrators and other school personnel are not evaluated on how well they accomplish their tasks. The focus of organizational members is shifted away from student outcomes. The result is goal displacement in which the employees are free to substitute their own goals for the conflicting demands of the public and the official goals of the organization. Behaviors are based on individual interpretation of the official goals colored by self-interest. Thus, the public choice model argues that the pattern of operation is a bureaucratic bargain between the building administrator and building personnel in which accommodations are reached to satisfy their individual needs (Michaelsen, 1977). These include minimizing conflict (or potential for conflict) from inside and outside the organization, ease of administration, equal treatment of teachers and/or students, maintaining stability in the organization, improving staff morale, promoting favored programs, shifting or maintaining the direction of the curriculum, and modifying or retaining the pedagogical approaches utilized.

Budgeting under the public choice model tends to be internally oriented and less concerned with the results produced by expenditures. The budget amounts are decided on the basis of the bureaucratic bargain described above. This view does not mean that school administrators are deceitful or act illegally.

> By accepting this theory of motivation, we do not rule out altruism. Administrators and teachers, like entrepreneurs,

> take pride in their work and strive for excellence. The issue is not whether bureaucrats are altruistic, but rather whether there are mechanisms available to harness their self-seeking to the public interest." (Michaelsen, 1977, p. 239)

Some of these objectives may indeed be self-serving and status enhancing for the administrators and teachers involved. Other objectives, particularly those concerning curriculum, pedagogy, or staffing, may represent beliefs that certain approaches will be better than others for student learning; however, these assessments and subsequent resource allocation decisions are largely subjective and intuitive, rather than being linked formally to measures of specified student outcomes.

METHODOLOGY

To examine both the resource allocation procedures and the basis for decisions made during the process, detailed case studies were made of four high schools located in three separate districts in Oregon. The schools were chosen specifically to represent a range of characteristics believed to have the capability of influencing resource allocation practices: budget processes ranging from participatory to dictatorial, a variety of instructional and administrative arrangements, some range in size (from approximately 1,000 to 1,740 students), student populations with different socio-economic status, and principals who had been at the schools for at least four years. Schools from several districts were included so that the effects of varying district policies and of different communities could be observed. The schools have been given fictitious names in this study (Advance, Bridge, Central, and Delegate).

Resources were defined as personnel and other items, such as services, supplies, and equipment, that were purchased and used in the educational process. Resources which did not appear in the schools' budgets (e.g., volunteer efforts, or resources provided by other agencies) were excluded.

During the 1984-85 school year, the author made approximately forty visits to the four high schools to observe the resource allocation processes. Almost half of these visits were concentrated during the two to three months of the budget development period, while the remainder were scheduled periodically throughout the year to examine the full range of school planning, budgeting, and financial management activities.

In each school, interviews were conducted with the principal, one or more assistant principals, two to four department heads representing both academic and nonacademic areas, and school level business managers and budget secretaries. Structured interview guides for each type of school personnel were employed to ensure that similar questions were asked in each school. The questions asked were divided into two general types: those to obtain a description of the resource allocation process; and those to analyze which models best matched the behavior of school personnel in allocating resources under their control. Examples of each type of question are provided in Figure 1.

[INSERT FIGURE 1 ABOUT HERE]

Some of the most interesting and fruitful time in the schools was spent attending staff meetings and budget meetings. From three to ten small and large group meetings were visited in each of the three schools that used these procedures as part of

FIGURE 1

SAMPLE INTERVIEW QUESTIONS FOR SCHOOL PERSONNEL

DESCRIPTIVE

Who is involved in the resource allocation process in your school?
What role does each individual play in the process?

What are the primary steps in the process?

What information do you have when preparing your budget request?
Where do you obtain this information?

What information do you use when making decisions among competing budget requests?
Where do you obtain this information?

What rules and guidelines are there governing the budgeting process?
Who imposes them (principal, district office, school board)?
Are they closely followed? Why or why not?

Are there differences in the way different types of resources are allocated? (personnel, supplies, equipment)?

ANALYTICAL

What is the basis for making a budget request?
What justification is required for various items?

Are there any new budget items this year?
Why were these requested?
How did you justify these items?

Do you have access to prior years' expenditures?
How, if at all, are they used in deciding current allocations?

How are teachers allocated to departments?
Who does it?
Is there much change in the number of teachers in a department from year to year? What causes changes?

How are departmental budget allocations for nonpersonnel items determined (e.g., supplies, equipment)?
What is the basis for these decisions?
How and for what reasons are cuts made if the total requests are greater than the school's available dollars?

Do any outside groups participate in or influence the budget process? Who? How?

the budget process. As a nonparticipant observer, it was possible to witness the actual resource allocation practices firsthand. This allowed independent verification of the reported processes, as well as the opportunity to record the behaviors and expressed motivations of the participants.

All documents relevant to the budget process were collected from the schools. These included: guidelines and instructions for making budget requests; budget request forms; formal policies and administrative memoranda specifying priorities, procedures, or constraints for the budget process; prior year budget allocations by department; initial departmental budget requests and final allocations for the study year; individual teacher assignments by department and class; student enrollments by class; teacher handbooks; and student handbooks.

Interviews with superintendents, assistant superintendents, business managers, and personnel directors in each district were also held. These sessions were used to learn about district policies and procedures for allocation of personnel and other resources to schools, to collect instructions utilized in the budget development process, to determine the flexibility school principals had when distributing their allocations within their schools, and to obtain available budget and other data for examining resource allocation decisions.

The descriptive school documents and interview data were utilized to develop a picture for each school of its instructional and budgeting organization, the process used for deciding allocation of resources, and the principal's management approach. Particular emphasis was placed on the roles and

responsibilities of personnel involved in resource allocation decisions. Budget, personnel, and student data were analyzed to compare actual resource allocation patterns and the relative distribution of each among the schools' departments.

The written interview responses and budget meeting observations were analyzed for evidence of each of the three explanatory models. Each instance of a verbal or written comment or participant behavior related to either a rational, bureaucratic, or political approach was noted. These results were aggregated by major area in the resource allocation process to identify the prevalence of activities associated with each model. Conclusions about the validity of each of the three explanatory models of the resource allocation processes found in the high schools were based on a comparison of the actual practices with the theoretical behaviors predicted by the models.

FINDINGS

District Allocation Policies

District policies for allocating resources to high schools were based on equality. In the districts which contained more than one high school districtwide standards were utilized to distribute teachers and other certified personnel (student/teacher ratio), classified personnel (ratios or number of hours/week), administrators (fixed number), and supply and equipment monies (dollar-per-student or lump sum) to the schools. All these factors were established by school board policy and indicated that board members favored an equal distribution of resources.

As a district business manager explained, "It is easier to treat everybody the same than it is to explain and defend different allocations to each of the high schools in the district." However, in some cases, this equal treatment was not considered fair treatment; complaints were voiced in several of the high schools. "Even though we have 1,800 students and [another high school] has just over 1,000 students, we both get the same number of administrators." "We are in an older building and we should get more funds for maintenance and upkeep than [another high school in a newer building]."

Personnel Allocations within the High Schools

In all four high schools studied personnel allocation decisions were the principal's province; they were not delegated to or shared with others in the school's organization. However, before making personnel changes principals typically consulted with other administrators in their building and with department heads or other instructional supervisors to obtain more information, to seek advice, or to prepare them for the outcomes.

The bases for staffing allocation decisions among instructional departments were existing staffing, student enrollment patterns, and changes in course enrollments. These were combined with either explicit or implicit standards for class size to prevent overcrowded classrooms, overloaded teachers, or inefficient use of personnel. Annual changes in the number of teachers assigned to a department reflected changes in the number of course sections offered by the department, which in turn were determined by student enrollment. These changes tended

to be marginal adjustments, not large shifts (e.g., 0.4 FTE added to science department). The procedures provided principals with decision rules for making changes in staff allocations which left most teachers unaffected and could be readily understood and accepted by teachers.

The principal-controlled personnel allocations resulted in approximately equal loads in each department for the four high schools. As shown in Table 1, the average number of students per day for teachers in the academic departments was approximately the same as those in the nonacademic departments. In spite of the national and local concern about academic achievement, teacher workload was actually higher in academic departments in three of the schools and no school provided workload reductions for teachers in the academic subjects. For example, in three of the high schools the number of class assignments were generally equal for all teachers. In the other school, Advance High School, teachers in traditional academic departments (English, mathematics, science, foreign languages, social studies) were assigned five classes per day, while teachers in nonacademic departments (business, fine arts, home economics, industrial arts, physical education/health) had six classes per day. However, in the academic departments the average class size was greater, which resulted in a general parity of the total number of students taught among all teachers in the school.

[INSERT TABLE 1 ABOUT HERE]

Within both the academic and nonacademic departments of each school a range of teacher loads existed, but in most cases the differences were not too large. The exceptions that existed were

TABLE 1
AVERAGE NUMBER OF STUDENTS PER TEACHER BY DEPARTMENT
1985-86

DEPARTMENT	ADVANCE	BRIDGE	CENTRAL	DELEGATE	4 SCHOOL AVERAGE
SOCIAL STUDIES	134	134	125	138	133
MATHEMATICS	127	134	123	143	132
SCIENCE	133	117	123	130	126
FOREIGN LANGUAGE	117	119	120	133	122
LANGUAGE ARTS	113	125	119	123	120
ACADEMIC AVERAGE	125	126	122	133	127
PHYSICAL EDUCATION	111	173	143	178	151
ARTS & CRAFTS	128	132	119	158	134
HEALTH	134	108	135	148	131
BUSINESS EDUCATION	135	122	125	128	127
MUSIC & DRAMA	128	116	118	140	125
HOMEMAKING	111	135	82	147	119
INDUSTRIAL ARTS	110	91	82	119	100
NONACADEMIC AVERAGE	122	125	115	145	127
SCHOOL AVERAGE	123	127	119	136	126

NOTE: Delegate High School numbers tend to be higher because they had a seven period school day rather than the six period day utilized by the other three schools.

largely explained by individual school circumstances, space or equipment limitations which restricted class capacity, and the preferences and educational priorities of administrators. For example, in Advance High School, the most academically oriented of the four schools studied, the principal explained, "We offer an number of elective courses in language arts and foreign languages which by their nature have low enrollments. We think that these are important because they meet the needs of our student body." However, these administrators balanced the load somewhat by giving teachers one or two smaller elective classes combined with high enrollment basic classes for the remainder of their assignment.

Some of the personnel changes represented principals' efforts to implement curriculum changes which they believed appropriate for their students. For example, administrators at Advance High School reduced the number of positions in the industrial arts department (to shift the emphasis of the curriculum), increased the instructional positions in the computer science, physical education, health, and music and drama departments (in response to increasing enrollments), and added a librarian and a substance abuse counselor (to respond to school-wide priorities). Similarly, at Bridge High School the principal informed the faculty members involved that it was necessary to "refocus the vocational educational program into a principles of technology program to meet the future needs of students or to reduce the size of the program substantially."

Of the four schools, only Bridge High School had explicit criteria for terminating a program:

1. Class size below twelve for two consecutive years;
2. Offered at another high school in district or local community college; and
3. Not needed to meet district or state requirement.

Using these criteria, their electricity program and a specialized mathematics section had been terminated in the past few years. Implicit criteria used in the other high schools were similar, but their vagueness allowed more administrative discretion.

Budgeting Procedures for Nonpersonnel Resources

Advance High School utilized a participatory approach in its internal distribution of nonpersonnel resources. The department heads, with the assistance of teachers in their instructional department, prepared departmental budget requests for supplies and equipment. To assist in this task, the administration provided them with all available budget-related information: district instructions and timelines, historical allocation amounts by department, enrollments, the lump sum amount provided to the high school for supplies and equipment. The requests were aggregated by the school business manager and copies provided to each department head.

The key feature of this school's resource allocation process was a marathon meeting of the faculty council (principal, assistant principals, department heads, and support unit leaders) to reduce the total departmental budget requests ($314,000) to the school's allocation ($251,000). During the seven hour meeting each department head presented the department's budget request, answered any questions about it, offered reductions in their budget request, and made a case why certain reductions

should not be made. Department heads also questioned other departmental requests and suggested cuts in other departmental budget requests. The administration's budget request was considered along with the others; no special treatment was given to it during the deliberations.

In Bridge High School a budget committee, composed of the principal, assistant principals for curriculum and for administration, four division leaders (responsible for curriculum articulation among several instructional departments), librarian (for media items), two budget assistants (teachers on special assignment), and one teacher volunteer, was responsible for reducing the total budget requests for supplies and equipment ($240,220) to the total to the amount allocated to the school ($168,488). Five short meetings after school, lasting approximately one hour each, were held by the committee. The committee was guided in its deliberations by a budgeting procedures memorandum prepared by the principal.

The principal served as the chair of the budget committee and in this position he directed and controlled the process by setting the agenda, making comments and suggestions during the meetings, and by using his knowledge of where wanted the resources channeled to implement his vision of the school's educational programs. Since Bridge High School operated without department heads, the committee was without strong advocates for specific departmental requests. Consequently, the committee members generally deferred to the principal's suggestions on difficult decisions.

At Central High School the allocation of supply and

equipment funds at was closely controlled by the assistant principal for curriculum and budgeting. The centralized pattern in the school mirrored the concentrated authority at the central office level maintained by the district superintendent.

The assistant principal made a preliminary allocation of general instructional supply monies to each department, based on their past year's expenditures, his knowledge of the departments' operations, and an estimate of departmental enrollments for the upcoming year. He then met individually with each department head to discuss the department's plans and budgetary needs for the next year. With this input the assistant principal made any adjustments that he thought appropriate to the initial allocation amounts, informed the principal of his decisions, and forwarded this information to the district office and to each department head.

Allocations for equipment were treated separately. The assistant principal informed the department heads that "a little bit of money" was available from the district office for equipment and solicited their requests for three or four low cost items. When the department head requests exceeded the available allocation, the assistant principal requested reductions from several department heads to reach the allocation amount ($12,000).

Although Delegate High School had a traditional department head organizational structure, the school also had three area coordinators, each of whom functioned as the budget administrator for one-third of the academic departments. (Two of the three area coordinators were also department heads.) Departmental

supply budget requests (built from individual teacher requests) were submitted to an area coordinator who screened them for accuracy, proper coding, and reasonableness.

The three area coordinators made the nonpersonnel resource allocation decisions for the school. Their job, as assigned by the principal, was to meet as a group and jointly to allocate the available supply monies among the departments. Other than not exceeding the total amount allotted to the school, they were not given further direction or constraints from the principal. The area coordinators were also responsible for reviewing and prioritizing the equipment requests received from departments.

The principal deliberately stayed out of the allocation process himself. He felt that if he made or influenced departmental budget decisions, he would be unable to function as an arbitrator for any disputes that might arise. He defined his role as reviewing, approving, and transmitting to the district office the allocation decisions made by the school staff. The principal was prepared to lobby the district office for additional funds beyond the school's original allocation if he felt the requests were justified.

Supply and Equipment Allocations

The per student amounts allocated to supplies and equipment varied substantially among departments. Table 2 presents the allocation amounts for each school. The academic departments received very small amounts on a per student basis, while the nonacademic departments, in some cases, were allocated very large amounts. Only science among the academic areas had an allocation

averaging over $5.00 per student, while the average of nonacademic departments was almost $30.00 per student, and the industrial arts department in Advance High School had an allocation of $93.54 per student. The large differences among the dollar per student amounts for academic and nonacademic departments were commented upon during several of the high schools' budgeting processes, primarily by members of departments with low allocations.

[INSERT TABLE 2 ABOUT HERE]

There were logical reasons for these disparities. Allocations to departments were made for dollar amounts; the dollar per student amounts (which were calculated for this analysis) had relatively little, if any, impact on the allocation decisions. Academic departments relied heavily on textbooks as a teaching device and these were included in a schoolwide textbook allocation, not in their departmental allocation. Nonacademic departments had a greater use of consumable materials and expensive equipment in their operation which required higher allocations. Finally, academic departments tended to have high enrollments which reduced the per student costs, while some of the nonacademic departments had relatively low enrollments which increased their per student costs.

Equipment requests received the greatest scrutiny in the process. Each specific piece of equipment required justification to be included in the budget; this was the case whether it was a formal written justification (Delegate High School) or a verbal explanation (Advance and Bridge High Schools). Justifications tended to be of the "needed for teaching, to replace a broken

TABLE 2
SUPPLY AND EQUIPMENT ALLOCATION PER STUDENT-PERIOD BY DEPARTMENT
1985-86

DEPARTMENT	ADVANCE	BRIDGE	CENTRAL	DELEGATE
LANGUAGE ARTS	$3.72	$4.14	$2.42	$10.94
MATHEMATICS	$3.10	$1.96	$0.76	$1.97
SOCIAL STUDIES	$3.45	$1.93	$1.99	$4.50
SCIENCE	$14.26	$15.51	$6.37	$19.06
FOREIGN LANGUAGE	$3.98	$6.14	$1.19	$5.64
AVERAGE ACADEMIC	$5.70	$5.94	$2.55	$8.42
BUSINESS EDUCATION	$19.51	$28.19	$5.01	$24.24
PHYSICAL EDUCATION	$18.93	$12.62	$4.07	$8.41
INDUSTRIAL ARTS	$93.54	$65.17	$28.19	$64.03
HEALTH	$3.42	$14.16	$2.61	$4.14
MUSIC & DRAMA	$23.64	$41.11	$25.49	$69.55
ARTS & CRAFTS	$23.51	$36.86	$14.47	$31.65
HOMEMAKING	$49.64	$40.83	$37.95	$42.75
AVERAGE NONACADEMIC	$33.17	$34.13	$16.83	$34.97
SUPPORT UNITS				
COUNSELING	$4.31	$0.78	$0.53	$2.03
TESTING	$1.09	$0.26	$0.00	$1.03
LIBRARY	$4.56	$0.94	$0.91	$4.34
AUDIOVISUAL	$7.20	$7.02	$2.67	$11.81
OFFICE OF PRINCIPAL	$15.05	$6.01	$16.55	$23.21
TOTAL SUPPORT	$32.20	$15.01	$20.66	$42.42
SCHOOL-WIDE ITEMS				
TEXTBOOKS	$23.94	$35.48	$29.21	$23.01
LIBRARY BOOKS	$8.27	$5.73	$4.87	$14.11
REFERENCE BOOKS	$2.59	$2.45	$1.13	$0.00
PERIODICALS	$2.20	$1.99	$4.98	$2.16
COMPUTER	$12.64	$20.77	$24.53	$23.07
TOTAL SCHOOL-WIDE	$49.64	$66.41	$64.71	$62.35
SCHOOL AVERAGE	$144.16	$149.86	$122.00	$220.41

unit, or to modernize our equipment" variety. The orientation was to the needs of teachers in the instructional process, not to the results that were anticipated to be achieved.

Historical Influences and Stability

The personnel allocation decisions represented a strong commitment to the maintenance of existing programs and staff. Administrators preferred "to handle long term attrition through retirements and resignations." If this was not possible, a variety of short term strategies were described to minimize the impact on the teachers affected: shifting teachers to related classes (e.g., from Woods to Metals in Industrial Arts); part-time supervision of work-study students; transfers between schools. In Delegate High School the principal's reluctance disrupt teachers' lives and careers through involuntary changes led to imbalances between student enrollments and departmental staffing. Seventy-five students who had registered to take foreign language classes were turned away because of too few class sections. The principal commented that while "many colleges strongly recommended a foreign language in high school, students don't really have to have it to go on to college. It's not really necessary." He felt that these courses were really electives and the benefits to students were not worth the personal cost to the teacher in the industrial arts department whose position would have been reduced.

Past allocations to individual high school departments played a large part in determining the new allocations for the budget year in all four schools. In Advance High School a

printout of the prior two years supply and equipment allocations by department was given to each department head and was used repeatedly during the budget allocation meeting as a reference point to judge current budget requests. "What did they get last year?" was a frequent comment during their budget meeting. With the centralized organizational structure, the assistant principal in Central High School worked from the current departmental allocation amounts listing in preparing the distribution of supply monies for the upcoming year. The general tendency in all four high schools was to adjust departmental supply allocations upward by the percentage increase in the school's allocation from the district. However, the most recent actual expenditures were compared to that year's allocation amount in an attempt to correct discrepancies which may have crept into the system.

CONCLUSIONS

Student Outcomes

Student outcomes were not explicitly considered in the resource allocation process of any of the four high schools studied. Neither administrators nor faculty made decisions (or even comments) that were based on allocating or reallocating personnel, supplies, or equipment in order to improve student achievement (as indicated by higher test scores) or any other explicit student outcomes. There was no mention made in any of the interviews, budget meetings, or documents of a connection between resource allocation policies, decisions, or alternatives and student outcomes.

The inescapable conclusion is that administrators and

teachers in the high schools studied did not operate in accordance with the fundamental assumption of the rational model. Their actions and decisions were not based on improving student outcomes. In fact, they knew only very generally what student outcomes were in their schools. Statewide testing of selected grades provided some standardized results for some of the students, but this information was not used to direct resources to areas of need during the budgeting process.

There are several possible explanations for this inattention to student outcomes and the apparent failure of a rational model approach to explain resource allocation decisions in high schools. The first, and most obvious, is.that the objectives of the high school administrators and teachers were not student outcome oriented. They did not pay direct attention to student achievement because other motivations and incentives were more important to them. What these might be will be explored through the other behavior models discussed later in this section.

Another explanation could be the lack of necessary knowledge which would enable administrators and teachers to predict the relationship between inputs and outputs in education. If administrators could not "optimize" the educational outputs as required by the rational model, those operating in accord with its general tenets could be expected at least to "satisfice" by seeking to achieve adequate, not necessarily optimal, student results. (Allison, 1970, p. 72) Even this lesser standard was not attempted.

Another reason for the inattention paid to student outcomes by administrators and teachers could be the corresponding lack of

public interest in specific school results. Without a clear signal from their clients (parents and students) that outcomes are important, school personnel have little incentive to attempt improvement (and risk internal conflict or public failure) in this difficult area. In fact, it has been argued that "if there were clearer evaluative criteria for schools (brought about when like-minded consumers had an opportunity to choose their preferences), this would lead to more responsive employee behavior." (Cibulka, 1987, pp. 23-24)

However, even without public pressure for attention to student outcomes, it is possible that administrators and teachers as professionals could (or even should) be expected to make decisions in the best interests of their clients (students). In these high schools, there appeared to be no internalized professional norms which would highlight student outcomes in budgetary decision making.[1]

Process Orientation

In spite of the lack of attention paid to specific student outcomes, participants did believe that resource allocation decisions and the items purchased as a result were important in the educational process. The budget decisions and resource allocation choices for supplies and equipment were made to meet teachers' instructional needs, rather than being student outcome oriented.

> "We need these new microscopes for our biology class. The old ones are worn out."

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1. I am indebted to an anonymous reviewer for this point.

"In order to function, the teachers in the social studies department must have a working typewriter."

"This is the third year in a row that this teacher has requested a new [science instrument]. She'll be furious if it's turned down again."

Although faculty and student handbooks in three of the four schools contained specific educational goals for students (academic, social, and personal) and school personnel from all schools verbally supported these goals, there were no measures utilized to link resource allocation alternatives with program results. Indeed, the idea of this type of assessment was not even considered. While administrators and teachers subscribed to the general goals of the district and school, the connection between teaching assignments or supply and equipment allocations to each department and student achievement was more of a generalized feeling, an intuitive calculus about what was needed. As one vice principal said, "We hire good people and turn them loose to do their things."

Organizational Approaches

Both centralized and decentralized approaches to resource allocation were utilized by the high schools in the study. The choice of approach seemed to be determined by the organizational relationships between the district office and school, the principal's beliefs of the appropriateness (or inappropriateness) of sharing resource allocation decisions, and the abilities and expectations of the faculty.

The participatory approaches used in Advance and Bridge High Schools were implementations of explicit strategies by the principals to increase shared decision making between

administrators and teachers. More points of view could be presented and more individual and group interests were represented. They were deliberately open processes; all participants were party to the decisions which were made and no special deals favoring a single department were cut. Further, they were processes that shared internal accountability for the resource allocation decisions made for the schools. Department heads (who were teachers) and administrators were jointly responsible for distributing the resources provided by the district. However, all of those participating were school personnel; no students, parents, or anyone outside the school faculty were involved.

The centralized decision-making process, represented in Central High School, provided school administrators with stronger control over the manner in which resources were distributed. The amount of time school staff spent on the school on budget matters was greatly reduced, and the process was more efficient in that sense. However, even with input from department heads, the decisions were primarily those of a single administrator. The forum for reaching resource allocation decisions was much more limited and the range of possibilities considered was probably narrower.

The intermediate approach, utilized in Delegate High School, was designed to remove the principal and assistant principals from resource allocation decisions. The decision making process was viewed as a mechanical and educationally unimportant function with the potential for creating ill feelings among faculty members whose budget requests were reduced or denied.

Basis for Resource Allocation Decisions

Historical and Incremental. High school budget decisions were strongly influenced by historical expenditure patterns. Current year personnel allocations and supply and equipment amounts were generally the starting point for next year's allocations. All schools exhibited a substantial tendency to stability and continuation of existing programs and an avoidance of radical shifts.

As a result, personnel and supply allocations followed an incremental budgeting pattern; the base was, by and large, secure and changes in allocations, even for cause, were at the margin. Changes in departmental allocations of personnel or supply dollars (beyond an adjustment for inflation) required justification to modify the status quo. Shifts in enrollment, addition of a new section or course, and modification in state graduation requirements were the types of events which caused modifications in previous allocations. With a few exceptions, the causes were external to the high school administrators and faculty and not internally generated.

Equality. The distribution of personnel resulted in similar teaching loads across departments within each of four the high schools. This was a result of the principals' choices; state regulations did not specify class sizes nor were such provisions present in any of the districts' collective bargaining agreements. The basis for this allocation was more a consideration of equal treatment of teachers, rather than the educational needs of students or appropriate pedagogy. Even in

the one case when there was some differentiation of number of class assignments between teachers of academic and nonacademic subjects, this was balanced by an equal total number of students. Administrators, who made the personnel allocation decisions, practiced a standard of equality for their teachers based on workload and designed to treat all teachers in a similar fashion.

Supply and equipment allocations superficially violated the equality principle for resource distribution. However, the dollar amounts appeared to reflect differences in supply and equipment requirements among departments. Even this rationale, however, focused on inputs to the educational process; no linkage with student outcomes was considered.

Overall, the impression was that the allocation process functioned to provide something for everyone. The amount or type of item varied from department to department, but every teacher and administrator received more or less what the decision makers believed to be a fair share.

Efficiency. Personnel allocations were largely enrollment driven; principals used target class sizes, anticipated student enrollments, and graduation requirements to make their decisions. As noted before, the changes in personnel allocations were generally marginal and did not alter personnel allocations abruptly. However, low enrollment classes, unless balanced with higher enrollment classes, were very expensive and threatened the equality of teacher workload.

Educational Priorities. Overall, there appeared to be some match among the perceived needs of the students in each of the high schools, the direction of the curriculum, and the resources

allocated to departments. Advance and Bridge High Schools had higher percentages of college-bound students and wider academic curriculum offerings, particularly in the foreign languages and mathematics areas. Both of these schools had instituted changes in the course offerings and personnel allocations away from industrial arts to academic areas.

Central and Delegate High Schools, which had fewer students which were planning to attend college, had higher enrollments in business and industrial arts programs with resource allocations to match. These principals were more concerned about maintaining a wide range of course offerings to serve all their students. "[Delegate] is a comprehensive high school, meant to serve the needs of all students, not just the upper ten percent."

Internal Bargaining. Throughout the processes there were numerous examples of bargaining among personnel in the resource allocation decisions. In the high schools which used group processes for decision making (Advance, Bridge, and, to a lesser degree, Delegate) explicit tradeoffs between departments occurred, negotiations were common, and a variety of accommodations were made. For example, at the general budget meeting in Advance High School the mathematics department successfully argued for several more microcomputers for student and faculty use, while the drama department's request for a new sound system was delayed for a year. On the other hand, the same group approved an expensive optical scanner for attendance reporting ahead of competing academic requests because of the administrative needs (absences reported two to four days late and inability to identify class cutting) and teacher benefits

(reduced attendance reporting requirements). At Central High School the direct individual discussions between the assistant principal and each department head were negotiating sessions in which the department head had to bargain for an increase, if a greater allocation was desired.

Which Model Is Appropriate?

Resource allocation in the high schools studied did not operate according to a rational model. School personnel were not attempting to maximize some measure of student outcomes, such as test scores. The possibility of linking distribution of resources to improving student achievement was never considered explicitly. No evidence was found that the use of any consistent achievement measures to provide information for decision making had been contemplated.

Much of the behavior of the participants in the resource allocation process can be explained by the bureaucratic organization model. Current allocations for both personnel and nonpersonnel were based on past allocations and any changes were incremental. Standard operating procedures guided decisions in modifying personnel allocations; these were based on enrollments, minimum class sizes, and teacher workloads.

In and of itself this finding is not surprising. Many public organizations, such as schools, have been studied as bureaucratic organizations with similar conclusions. (Herriot and Firestone, 1984) However, while the bureaucratic organization model explains how these high schools operated, it does not explain why they functioned as they did. What is it about the

structure and organization of these high schools that permitted such disregard for their formal goals of student achievement when allocating resources essential to achieving these goals?

An answer is found in the public choice model. School personnel are so loosely connected with and unaccountable for the outcomes of schooling that other, more personal objectives replaced student outcomes in the resource allocation process.

The primary objective of the allocation process in the four high schools examined was equality among teachers in workload and in the teachers' self-declared needs for instructional supplies and equipment. In each school the allocation process worked differently, but functioned to distribute resources in such a way as to minimize conflicts among school personnel and to establish a perception of fairness among teachers. Similar to Mann, this analysis found that "The current procedures for resource allocation at the building level have more to do with the equitability of adult working conditions than with the production of responsive learning environments for children." (1981, p. 4)

Explicit attention to student outcomes as required by the rational model might have necessitated differential treatment of teachers and could have disrupted the internal harmony achieved by equal treatment. The combination of the bureaucratic organization model (to explain how) and the public choice model (to explain why) provides the most thorough explanation of the resource allocation process observed in these high schools.

REFERENCES

Allison, G. (1970). Essence of Decision: Explaining the Cuban Missile Crisis. Boston: Little, Brown.

Boyd, W. (1982). The political economy of public schools. Educational Administration Quarterly 18, 111-130.

Candoli, I. C., Hack, W., Ray, J., and Stollar, D. (1984). School Business Administration: A Planning Approach. Boston: Allyn and Bacon.

Cibulka, J. (1987). Theories of educational budgeting: Lessons from management of decline. Educational Administration Quarterly 23, 7-40.

Hanushek, E. (1986). The economics of schooling: Production and efficiency in public schools. Journal of Economic Literature XXIV, 1141-1177.

Hartman, W. T. (1985) Resource allocation in high schools. Eugene, OR: University of Oregon, Center for Educational Policy and Management.

Herriot, R. E. and Firestone, W. A. (1984). Two images of schools as organizations: a refinement and elaboration. Educational Administration Quarterly 20, 41-57.

Johnson, H. (1982) Planning and Financial Management for the School Principal. New York: Teachers College Press.

Kirst, M. (1975, April) The Rise and Fall of PPBS in California. Phi Delta Kappan LVI, 535-538.

Levin, H. M. (1971). Effect of different levels of expenditure on educational output. In R. L. Johns, et al. (Eds.). Economic Factors Affecting the Financing of Education (Vol. II, 173-206). Gainesville, FL: National Educational Finance Project.

Mann, D. (1981, April). Education Policy Analysis and the Rent-A-Troika Business. Paper presented at the American Educational Research Association Annual Meeting, Los Angeles.

MacKenzie, D. (1983) Research for school improvement: an appraisal of some recent trends. Educational Researcher no. 12, 5-17.

Michaelsen, J. (1977). Revision, bureaucracy, and school reform: A critique of Katz. School Review 85, 229-246.

Mundt, B., Olsen, R., and Steinberg, H. (1982). Managing Public Resources. Peat Marwick International.

Murphy, J., Hallinger, P., and Mesa, R. (1985). School effectiveness: Checking progress and assumptions and developing a role for state and federal government. Teachers

College Record 86, 615-641.

Phyrr, P. (1973). Zero-Base Budgeting. New York: John Wiley and Sons.

Purkey, S. and Smith, M. (1982) To soon to cheer? Synthesis of research on effective schools. Educational Researcher no. 40, 64-69.

van Geel, T. (1973). PPBES and district resource allocation. Administrators Notebook XXII, 1-4.

Wildavsky, A. (1976). Budgeting. Boston: Little, Brown.